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ABSTRACT

This document presents one module in a set of training resources for trainers to use with parents and/or professionals serving children with disabilities; focus is on computers and students with special needs. The modules stress content and activities that build skills and offer resources to promote parent-professional collaboration. Each training module takes about 2 hours to deliver. The module guide has eight sections: a publicity flyer, topic narrative, overview, trainer agenda, activities, summary, bibliography, and evaluation. Introductory information explains how to use the modules including conducting a needs assessment, planning the training, selecting the training module, implementation, evaluation, and followup. Objectives of this module are: (1) recognize the ways in which computers can empower students with all disabilities to learn and to function in a more productive manner, (2) identify computer resources available to them, and (3) plan how computer use might be enhanced at home or at school in their specific region. A bibliography identifies 17 books, magazines, or other resources. (DB)

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COMPUTERS and STUDENTS with SPECIAL NEEDS: AN INTRODUCTION

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California State Department of Education,
Special Education Division
Program, Curriculum and Training Unit

Presents a Module on:

Computers and Students with Special Needs: An Introduction

Prepared by:

Donna H. Dutton, M.A., M.S.

Edited by:

Lynn Carlisle

1988

This module, as well as thirteen others, were produced under the direction of Karl E. Murray and Susan Westaby of the Program, Curriculum and Training Unit, Special Education Division, CA State Department of Education. The modules are being field-tested throughout 1988. During this field-test stage, they are available by sending $ 5.00 for each module (includes tax and mailing) to: Parent Training Modules, CA State Department of Education, P.O. Box 944272 - Room 621B, Sacramento, CA 94244-2720. Make checks payable to Parent Training Modules.

INTRODUCTION

The Parent/Professional Training Modules have been developed to serve as a core set of training resources for trainers to use primarily with groups of parents. Some of the trainings were designed specifically for combined groups of parents and professionals, and all the trainings can be adapted for use with parents or professionals as separate or combined audiences. The training modules in the series focus on content and activities that build skills and offer resources to promote parent-professional collaboration to ensure quality education for all students with disabilities. There are fourteen training modules in this series:

Parent Professional Collaboration
Parental Involvement
Stress and Support in the Family
Coping with Loss and Change
Parent Support Groups
An Effective Community Advisory Committee
Community Advisory Committee Leadership Training
Communication Skills
The Individualized Education Program: Rights and Responsibilities
Placement in the Least Restrictive Environment
Training for Professionals Working with Families
Parent Professional Collaboration in Planning for Employment
Transition Planning
Interagency Collaboration: The Parents' Role

Each training module has eight sections:

Flyer
Topic Narrative
Overview
Trainer Agenda
Activities
Summary
Bibliography
Evaluation

Within each of these sections there are these materials:

Flyer - The Flyer highlights what participants can expect to learn by attending the training. It can be personalized for each training by adding date, time, and location in the appropriate spaces.

Topic Narrative -- The Topic Narrative contains content information specifically for the trainer. Trainers use the information to enhance their knowledge and understanding of the subject matter of the training module.

Overview -- The Overview contains the goals and objectives for the module; and the content and presentation strategy for each activity contained within the module.

Trainer Agenda -- The Trainer Agenda contains details of trainer and participant activities, materials and media. It is a suggested agenda that trainers can personalize to fit their style and the specific needs of the participants. A few modules that deal with sensitive or difficult content have Trainer Tips included in the Agenda section.

Summary -- The Summary contains highlights of all the content information presented in activities within the training. The Summary was designed to provide information to prospective participants and to workshop planners.

Bibliography -- The Bibliography contains the names of books, magazines and other resources that were used as references in developing the training modules and may serve as a list of suggested reading materials for trainers as well as participants.

Evaluation -- The Evaluation contains questions that directly assess the objectives of the module as well as some general questions to evaluate the usefulness of materials and trainer effectiveness.

The Parent/Professional Training Modules have been designed to be a flexible and expandable resource for trainers of parents and professionals. It can be housed in binders or in file folders and rearranged as needed. Trainers are urged to add articles, resources and other materials that will make each training reflect their individual style and meet the needs of the participants.

HOW TO USE THESE TRAINING MODULES

Conduct a Needs Assessment:

Gather as much information as you can about the groups that you will be working with. The following types of questions may help:

Does the group meet regularly or is it assembled specifically for the purpose of this training?

What does the group want to accomplish? Does it have a stated goal? Are there a set of outcomes that the group wants to achieve?

Who is involved in the group (agencies and organizations)?

If the group is an ongoing group, how is the group organized? (officers, executive committee, standing committees, task groups, etc.)

What has the group already done? What training has the group already received?

What is the group working on now?

How does the group get things done?

Has the group conducted a needs assessment to determine the group's need for training and the training topics of interest?

Plan the Training

Typically, this is a dialogue between the trainer and the client. Often, the client will have a specific topic or activity in mind. Sometimes additional topics will be suggested during the needs assessment process when the trainer probes to get more information. The trainer can share a list of module topics and/or several module summaries to aid the client in selection of a topic(s) from the series.

Select the Training Module

The Parent/Professional Training Modules offer a wide selection of topics and activities. The trainer can select the module that deals with the topic chosen by the client.

Review the Training Module

The module provides the core activities and a suggested trainer agenda. The trainer can adjust both to reflect their individual style and the needs of the client.

Identify Additional Resource Materials

The trainer can add articles, resources, and other materials to the core training module. Often a trainer will introduce local resources or pertinent sample materials.

Deliver the Training

The Parent/Professional Training Modules are best delivered by a training team of a parent and a professional. Collaboration is modeled by the team as each member of the team displays unique perspectives, abilities and knowledge as they enhance each others presentation styles.

Evaluate the Training

Evaluation is an essential element of any training. Each module includes an evaluation that assesses the specific objectives of the module and the usefulness of materials. These evaluations can assist the trainer in refining the module content and modifying presentation style, if needed.

"Follow-Up" the Training

It is a good practice to follow-up any training with a personal visit, letter, or a phone call. The trainer may wish to keep a list of names, addresses, and phone numbers of participants to facilitate follow-up. The follow-up usually consists of discussion about how the training may have impacted the client's personal or professional life. Clients may express the desire for further training and/or materials and resources.

Computers and Students With Special Needs: An Introduction

(For All Interested and Involved Parents and Professionals)

You, as a participant, will learn about:

- how computers can empower students with disabilities to learn and to function better
- what computer resources are available
- planning to enhance computer use in your area for students with special needs

Day and Date:

Time:

Location:

For More Information, Call:

Please Come

Computers And Students With Special Needs: An Introduction

Topic Narrative

In just the past few years, there has been an exciting burst of technology in this country, and fortunately, much of it will be helpful for students and adults with disabilities. Research and developments have taken place which have resulted in knowledge of many, many ways that people with disabilities can be empowered through the use of computers. Unfortunately, the dissemination of this information has been very slow. Now, teachers and parents are learning that computer applications exist which can benefit everybody.

How can computers be used as tools for students with various disabilities?

Computers used with adaptive devices can provide a means by which students with physical disabilities can communicate, write, calculate, and do other tasks which usually require paper and pencil. It is not even necessary to use the computer keyboard. Various devices make it possible for students to use the computer, as long as they can voluntarily move just one muscle. Specially adapted keyboards can be used, as can switches or input devices which may be operated by a finger, foot, elbow, arm, head, chin, mouth, eyebrow, or eyegaze!

Computers can provide students with learning disabilities with practical assistance in reading and writing as well as an interesting, painless way to drill and practice skills in an atmosphere that enhances task attention. Just the use of word processing can make the writing process much less frustrating. Add a spelling checker, an outlining program, large print, or voice output, and writing becomes fun!

Computers can provide students with mental retardation a way to write and to practice functional skills in an interesting, nonjudgmental atmosphere.

Computers can provide students with hearing impairment a new way to communicate. Word processing with voice output can be satisfying for the person with the impairment as well as for the listener. People with hearing impairments frequently enjoy communicating with others over the phone, via a modem, which allows the text generated on the computer to be transmitted over the phone.

Computers can provide students with vision impairment with large print material on screen and on paper, voice output for text, and simultaneous Braille and print output on a printer.

Computers can provide students with emotional disturbances a highly motivating tool.

Computers can provide students with severe and multiple handicaps a means to communicate and to participate more effectively in daily life.

Computers can provide exciting, age-appropriate, socially acceptable recreation and leisure activities for students with exceptional needs and their nonhandicapped peers.

Computers can be the tool which allows students with exceptional needs to function in the regular classroom.

Computers can provide access to many jobs previously considered inaccessible to students with disabilities.

Parents and professionals can collaborate to use existing resources to locate information regarding the potential of computers in their specific situations. They can identify the resources they need to enhance the use of computers by students with special needs. These resources may include national, state or local resource centers, sources of funding, engineers who want to help, individual teachers or parents who already use computers successfully and can act as expert guides, courses at nearby colleges, software publishers, helpful dealers, etc.

The problem is not that there is a lack of appropriate computer applications available for students with disabilities. The problem is that not enough people are aware of the available technology, and consequently, implementation is not what it could be. Parents and professionals, working together, can find the information and resources they need to make this technology available to the students who need it.

Overview

The goal of this module is to provide parents and professionals who work with students with exceptional needs an awareness of the potential for microcomputers to empower children with disabilities.

Objectives

1. Recognize the ways in which computers can empower students with all disabilities to learn and to function in a more productive manner.
2. Identify computer resources available to them.
3. Plan how computer use might be enhanced at home or at school in their specific region.

Objective Number	Suggested Minutes	Content	Presentation Strategy
	10	Introduction, Objectives and Agenda Review	
	10	Inclusion Activity: Present Computer Use	Individual Sharing with Group
1	15	"Access"	Video
1	15	Apple Computer Office of Special Education	Slide Show
	10	Break	
2	10	Available Resources: State and National	Lecturette and Large Group Discussion
2	20	Locally Available Resources	Small Group Activity with Large Group Report Back
3	20	Action Planning	Large Group Activity
	10	Conclusion and Evaluation	
	120		

Trainer Tips

Trainers may obtain (on a one week loan) the Access video and the Apple Computers, Inc. slide show from:
California State Department of Education
Special Education Division
Program, Curriculum and Training Unit
P.O. Box 944272
Sacramento, CA 94244-2720
(916) 324-7152

Apple Computer, Inc. also has two outstanding publications that trainers may want to have as resources.

Apple Computer Resources in Special Education and Rehabilitation Available from:
DLM
P.O. Box 4000
Allen, Texas 75002
1-800-527-4747
Price: $19.95 plus tax and $1.50 handling

Connections - A Guide to Computers For Disabled Children and Adults. Available from:
Office of Special Education Programs
Apple Computer, Inc.
20525 Mariani Ave.
Cupertino, CA 95014
1-800-538-9696
Price: Free

Suggested Trainer Agenda

WORKSHOP TITLE: Computers and Students with Special Needs: An Introduction DATE: _____ PAGE: 1

CLIENT: _____ PRESENTERS: _____

GOAL: To provide parents and professionals who work with students with exceptional needs an awareness of the potential for microcomputers to empower children with disabilities.

OBJECTIVES:
1. Recognize the ways in which computers can empower students with all disabilities to learn and to function in a more productive manner.
2. Identify computer resources available to them.
3. Plan how computer use might be enhanced at home or at school in their specific region.

TIME	WHO	TRAINER ACTIVITIES/CONTENT	PARTICIPANT ACTIVITIES	HANDOUTS MEDIA
10 minutes		Welcome Introductions Objectives and Agenda Review Display Objectives and Agenda on Chart Paper	Listen	Chart Paper Pens Tape Chart of Objectives and Agenda
10 minutes		Inclusion Activity: Present Computer Use Ask participants to take turns sharing the answer to the following: My name is _____. My child is __ years old and attends _____ School (or I teach at _____). My present relationship to computers is _____ _____. (Trainer should model a response, making it brief).	Share	

Suggested Trainer Agenda (continued)

TIME	WHO	TRAINER ACTIVITIES/CONTENT	PARTICIPANT ACTIVITIES	HANDOUTS
15 minutes		"Access" Activity/Handout 1 Video Distribute Handout 1 Show Video Participants will view a video produced by the Office of Special Education of Apple Computer, Inc. which will give them an idea of how computers can be used with students with various disabilities. Handout 1 contains a list of devices and software shown in the video.	View Video	VCR Video Handout 1
15 minutes		Apple Computer Office of Special Education Activity 2 Slide Show Show Slides THIS IS AN OPTIONAL SLIDE SHOW Participants will view a slide show produced by the Office of Special Education of Apple Computer, Inc. which will describe what Apple is doing in the area of special education.	View Slides	Slide Projector and Screen
10 minutes		Break		
10 minutes		Available Resources: State and National Activity/Handout 3 Lecturette and Large Group Discussion Distribute Handout 3 Trainer will explain state and national computer resources using Handout 3.		Handout 3

Suggested Trainer Agenda (continued)

TIME	WHO	TRAINER ACTIVITIES/CONTENT	PARTICIPANT ACTIVITIES	HANDOUTS
20 minutes		<u>Locally Available Resources</u> Activity 4 Small Group Activity with Large Group Report Back Trainer will divide the participants into small groups of 4-6. If both parents and professionals are present, an effort should be made to include both in each small group. Provide each group with large sheet of paper and pen(s). Trainer instructs each group to select a recorder/reporter. The task of the group is to brainstorm local computer resources and come up with a list to be shared. This list might include a school district program, a knowledgeable teacher, a helpful commercial dealer, a knowledgeable parent, an interested engineer, a software publisher, a source of funding such as state grants, a computer users' group, etc. The idea is for the group to generate a list and acknowledge that local resources DO INDEED EXIST and that it is possible to find help, even when expertise may seem to be limited. Recorders/reporters from the small groups report out to the large group. All ideas that were generated are recorded on chart paper, so that everyone can see that there are a large number of resources available to parents and professionals who want to make computers a more significant part of the picture for students with special needs.	Select Reporter/ Recorder Share Discuss	Chart Paper
20 minutes		<u>Action Planning</u> Activity 5 Large Group Activity Trainer will act as facilitator, and will lead the group through the process of looking over ideas they have generated.	Share ideas Work toward consensus	Chart Paper

Suggested Trainer Agenda (continued)

TIME	WHO	TRAINER ACTIVITIES/CONTENT	PARTICIPANT ACTIVITIES	HANDOUTS
		Trainer will ask the group to suggest goals for computer use in the area. All ideas should be recorded on chart paper. The group should reach consensus on 2-3 goals toward which they would like to work. Hopefully, these would be goals which could be reached through parent-professional collaboration. Trainer will ask the group to suggest some "next steps" that could be taken to begin to work toward the goals. All ideas should be recorded on chart paper in the following format: Action: Who is Responsible: When: (date action will be completed)		
10 minutes		<u>Conclusion</u> Restate Objectives. Thank Participants. Complete Evaluation/Handout 6.	Complete Evaluation	Handout 6

Computers and Students With
Special Needs
Activity/Handout 1
Video
15 minutes

"Access"

(For your information, here is a list of devices and software shown in the video: "Access.")

Devices:

Touch Window, Edmark Corporation, 14350 N.E. 21st, Bellevue, WA 98009
Headmaster Workstation, Personics Corp., 2352 Main St., Bldg. 2, Concord, MA 01742
Echo Voice Synthesizer, Street Electronics, 6420 ViaReal, Carpinteria, CA 93013
Ohtsuki Printer (Braille and text), Ohtsuki Communications Products, Inc., 1399 Ygnacio Valley Rd., Suite 24, Walnut Creek, CA 94598
Keyguard, Don Johnston Developmental Equipment, Inc., 1000 N. Rand Rd., Bldg. 115, Wauconda, IL 60084
Unicorn Expanded Keyboard, Unicorn Engineering Co., 6201 Harwood Ave., Oakland, CA 94618 (requires Adaptive Firmware Card, Adaptive Peripherals, Inc. , 4529 Bagley Ave. North, Seattle, WA 98103)
Power Pad, Dunamis, Inc., 3620 Highway 317, Suwanee, GA 30174
Muppet Learning Keys, Sunburst Communications, Room CF6, 39 Washington Ave., Pleasantville, NY 10570-9971
Light Pointer, Adaptive Communications Systems, Inc., Box 12440, Pittsburgh, PA 15231
Joystick (many manufacturers)
Single switches (wide variety, several manufacturers, some of the above).

Software:

Wizard of Words (includes Castle Capers), Advanced Ideas, for Apple II series
Pagemaker, Aldus, for Macintosh
Keytalk, PEAL Software, for Apple II series
Dinosaur Game, UCLA Intervention Program, for Apple II series
Airborne,Silicon Beach Software, for Macintosh

State and National Computer Resources

Abledata
8455 Colesville Rd.
Silver Springs, MD 20910
(301) 588-9284 (800) 346-2742

Abledata (national): a large data base of information one can call regarding equipment and solutions for persons with disabilities.

Apple National Special Education Alliance
Office of Special Education Programs
Apple Computer, Inc.
20525 Mariani Ave.
Cupertino, CA 95014
(408) 973-3854
Jackie Brand, Pam Patton

Apple National Special Education Alliance and Apple Office of Special Education Programs (national): is a group of 23 nonprofit centers around the country which were invited by Apple Computer, Inc. to be members of its Alliance. There are three in California: The Disabled Children's Computer Group, the Computer Access Center, and the Special Technology Center. These are community based centers which serve parents as well as professionals. Also, members of the Alliance are developers and publishers who specifically produce products which help persons with disabilities. The Apple Office of Special Education Programs can provide further information regarding Apple computer use by persons with special needs.

Assistive Device Center
California State University, Sacramento
6000 J Street
Sacramento, CA 95819-2694
(916) 454-6422

Assistive Device Center (California): a place to go for evaluation of one's potential to use a wide variety of assistive devices, including those which provide access to the computer.

California State University, Northridge
Office for Disabled Student Services
11811 Nordhoff St.
Northridge, CA 91330
(818) 885-2869
Dr. Harry Murphy

California State Northridge Office for Disabled Student Services (California): puts on a major international conference every fall.

Center for Special Education Technology
Council for Exceptional Children
TECH-TAPES
(800) 345-TECH

Center for Special Education Technology (national): a source of information regarding technology for people with disabilities - over the telephone.

Closing the Gap
P.O. Box 68
Henderson, MN 56044
(612) 248-3294
Bud and Delores Hagen

Closing the Gap (national): puts out an outstanding "newspaper" called **Closing the Gap,** for parents and professionals, including extensive software and hardware reviews once per year, seminars in Henderson, Minnesota in the summer, and a very comprehensive conference in Minneapolis every October.

Computer Access Center
2425 16th St., Room 23
Santa Monica, CA 90402
(213) 450-8827
Donna Dutton

Computer Access Center (southern California): is a nonprofit organization and a charter member of Apple's National Special Education Alliance. Its staff is prepared to help families and professionals who want to find and try hardware and software to help children with disabilities. The Center provides meetings, workshops, technical assistance, and a newsletter.

DCCG: Disabled Children's Computer Group
2095 Rose St., 1st floor
Berkeley, CA 94709
(414) 841-DCCG
Alice Wershing

Disabled Children's Computer Group (northern California): is a nonprofit organization and a charter member of Apple's National Special Education Alliance. Its staff is prepared to help families and professionals who want to find and try hardware and software to help children with disabilities. DCCG provides meetings, workshops, technical assistance, and an electronic bulletin board.

IBM National Support Center for Persons with Disabilities
P.O. Box 2150
Atlanta, GA 30055
(800) IBM-2133

IBM National Support Center for Persons with Disabilities (national): can provide information regarding IBM computer use for persons with special needs.

SpecialNet
2021 K St. N.W., Suite 315
Washington, DC 20006
(202) 296-1800

SpecialNet (national): an on-line service for about $200.00 per year. One can send and receive electronic mail and access a number of data bases relevant for special education, including information about technology.

Special Technology Center
Division of Parents Helping Parents Inc.
535 Race St., Suite 220
San Jose, CA 95126
(408) 288-5010
Lisa Cohn, Les Taylor

Special Technology Center (northern California): is a nonprofit organization and a member of Apple's National Special Education Alliance. It's staff is prepared to help families and professionals find software and hardware to help children with disabilities.

Trace Research and Development Center for Communication Control and Computer Access
Room S-151, Waisman Center
1500 Highland Ave.
Madison, WI 53705
(608) 262-6966

Trace Research and Development Center (national): an excellent source to write for printed information, especially regarding persons with physical disabilities and computers.

Western Center for Microcomputers in Special Education
1259 El Camino Real, Suite 275
Menlo Park, CA 94025
(415) 326-6997
Dr. David Uslan, Sue Swezey

Western Center for Microcomputers in Special Education (California and national): puts out an excellent newsletter called **The Catalyst**, which would be appropriate for parents as well as professionals for $10.00 per year.

Computers And Students With Special Needs: An Introduction

Summary

In just the past few years, there has been an exciting burst of technology in this country, and fortunately, much of it will be helpful for students and adults with disabilities. Research and development have taken place which result in knowledge of many, many ways that people with disabilities can be empowered through the use of computers. Unfortunately, the dissemination of this information has been very slow. Now, teachers and parents are learning that there exist computer applications which can benefit everybody.

How can computers be used as tools for students with various disabilities?

- Computers used with adaptive devices can provide a means by which students with physical disabilities can communicate, write, calculate, and do other tasks which usually require paper and pencil.
- Computers can provide students with learning disabilities with practical assistance in reading and writing as well as an interesting, painless way to drill and practice skills in an atmosphere that enhances task attention.
- Computers can provide students with mental retardation a way to write and to practice functional skills in an interesting, nonjudgmental atmosphere.
- Computers can provide students with hearing impairment a new way to communicate.
- Computers can provide students with vision impairment with large print material on screen and on paper, voice output for text, and simultaneous Braille and print output on a printer.
- Computers can provide students with emotional disturbances a highly motivating tool.
- Computers can provide students with severe and multiple handicaps a means to communicate and to participate more effectively in daily life.
- Computers can provide exciting, age-appropriate, socially acceptable recreation and leisure activities for students with exceptional needs and their nonhandicapped peers.
- Computers can be the tool which allows students with exceptional needs to function in the regular classroom.
- Computers can provide access to many jobs previously considered inaccessible.

Parents and professionals can collaborate to use existing resources to locate information regarding the potential of computers in their specific situations. They can identify the resources they need to enhance the use of computers by students with special needs. These resources may include national, state, or local resource centers, sources of funding, engineers who want to help, individual teachers or parents who already use computers successfully and can act as expert guides, courses at nearby colleges, software publishers, helpful dealers, etc. The problem is not that there is a lack of appropriate computer applications available for students with disabilities. The problem is that not enough people are aware of the available technology, and consequently, implementation is not what it could be. Parents and professionals, working together, can find the information and resources they need to make this technology available to the students who need it.

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Proceedings of the conference *"Computer technology / special education / rehabilitation,"* held at California State University, Northridge, October 16-18, 1986. Office of Disabled Student Services, CSUN, 11811 Nordhoff St., Northridge, CA 91330, 1987.

Proceedings of the conference *"Computer technology and persons with disabilities,"* held at California State University, Northridge, October 17-19, 1985. Office of Disabled Student Services, CSUN, 11811 Nordhoff St., Northridge, CA 91330, 1986.

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Wright, C. and Nomura, M. *From toys to computers.* P.O. Box 70242, San Jose, CA 95170: Christine Wright, 1985.

Evaluation

Your responses to the questions/statements below will assist us in improving this module. Please respond to all items. Your participation in this evaluation is completely anonymous. DO NOT place your name anywhere on the evaluation.

Based on a scale of 1 through 10, how much of the information presented was new to you?

_____ 1 is not much new; 10 all new.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. As a result of this session, I am aware of several ways that computers can empower students with disabilities to learn and to function in a productive manner.	1	2	3	4	5
2. As a result of this session, I can identify some local, state, and national resources available to me in the area of computers and special education.	1	2	3	4	5
3. After this session, I know what can be done to enhance computer use in my area.	1	2	3	4	5
4. The material presented was sensitive to all cultural groups.	1	2	3	4	5
5. The material covered information which was appropriate to all handicapping conditions.	1	2	3	4	5
6. The material presented matched my needs.	1	2	3	4	5
7. I will use some of the information/ resources that were introduced.	1	2	3	4	5
8. The instructors did a good job.	1	2	3	4	5

9. Specific suggestions to improve this module: _____

_____

_____